

REMARKS

The Examiner's Action mailed March 17, 2004 has been received and its contents carefully considered.

Claims 1-12 are pending in this application. New dependent claims 13 and 14 are added herein. Claim 1 remains the sole independent claim.

The Applicants acknowledge with appreciation the Examiner's early indication that claims 2-11 would be allowable if rewritten in independent form, including all of the limitations of their respective base claims and any intervening claims.

In the Action, claims 1 and 12 are rejected as being obvious over Sonobe et al. (U.S. Patent No. 6,054,716) in view of Uemura et al. (U.S. Patent No. 6,291,840) further in view of Murasato et al. (5,744,829) and further in view of Saeki et al. (U.S. Patent No. 6,586,773). The rejection is respectfully traversed.

Regarding claims 1 and 12, the Examiner points to Sonobe as disclosing a semiconductor light emitting device having a protection device where a semiconductor light emitting device incorporates inside a light emitting portion formed by semiconductor overlying layers including a first conductivity layer and a second conductivity layer in order to have a light emitting layer, and a protecting element portion provided in electrical connection between the first conductivity type layer and the second conductivity type layer so that the light emitting layer is protected against at least reverse voltage applied to the light emitting portion.

However, the Examiner acknowledges that Sonobe fails to disclose the required current diffusing electrode, laminating portion and bonding electrode structures. To overcome these deficiencies in the base reference, the Examiner points to Uemura as disclosing a compound semiconductor light emitting device where the required current diffusing electrode structure is disclosed, further points to Murasato as disclosing an AlGaInP light emitting diode where the laminating portion structure is disclosed, and finally points to Saeki as disclosing a semiconductor light emitting device where the required bonding structure is disclosed. The Examiner argues that it would have been obvious to one having ordinary skill in the art at the time the invention was made to include the required current diffusing electrode, laminating portion and bonding electrode structures in

Sonobe as taught by Uemura, Murasato and Saeki, respectively, in order to have a semiconductor light emitting device with higher performance.

The Applicants respectfully disagree. The claimed invention is primarily characterized in that (i) the semiconductor laminating portion with a current diffusing electrode provided on the surface is separated into a plurality of light emitting unit portions A, an electrode pad portion B, and connecting portions C for connecting between the electrode pad portion B and the light emitting portions A or between two of the light emitting portions A, and (ii) the bonding electrode 9 is provided on the electrode pad portion B and the electrode pad portion B is formed non-luminously by providing the current blocking layer 7 over the surface, for example the light emitting forming portion 11 (see application paragraph 0015).

As the Examiner indicates, Sonobe discloses a light emitting device with a protection diode incorporated. However, the protection diode is connected to the light emitting portion of the device to provide protection against a reverse voltage being applied to the light emitting portion, and bears no relationship to the present invention at all. While the Examiner does acknowledge that Sonobe fails to disclose the required current diffusing electrode, laminating portion and bonding electrode structures, Sonobe also fails to disclose the above-discussed features (i) and (ii). Nowhere does Sonobe teach or suggest a semiconductor laminating portion and a current diffusing electrode that are separated into a plurality of light emitting unit portions, an electrode pad portion, and connecting portions, or that the electrode pad portion is formed so as to make the light emitting layer forming portion in the electrode pad portion be nonluminous, as claim 1 recites. Quite the contrary, the device in Sonobe, as shown in Figure 23 for example, has a single light emitting portion 3 with an electrode pad 38 formed directly on the light emitting portion, and hence has none of the advantages of the present invention (see, for example, application paragraph 0042). In short, Sonobe differs completely from the claimed invention in both purpose and structure.

Uemura discloses a light emitting device using a GaN-based semiconductor and discloses a current diffusing electrode 8A, but fails to disclose either of the above-mentioned features (i) and (ii).

Murasato discloses an AlGaInP-based light emitting diode having a multi-film reflection layer between the GaAs substrate and the double hetero-junction light-emitting structure. The layers forming the double hetero-junction are lattice matched with the GaAs substrate at an epitaxial growth temperature. A GaP current diffusion layer is disposed on the upper surface of the double hetero-junction light-emitting structure (see Abstract of Murasato). However, Murasato fails to disclose either of the above-mentioned features (i) and (ii).

Saeki discloses a InGaAlP-based light emitting device having first and second bonding layers 2, 3 between the substrate 1 and the light emitting layer structure 7 (Saiki Figure 1), which is not the same as the bonding electrode formed on a part of the current diffusing electrode, as recited in claim 1. Moreover, like the other references, Saeki fails to disclose either of the above-mentioned features (i) and (ii).

Hence, it is clear that the Examiner's proposed combination would not result in the claimed invention.

For at least the foregoing reasons, it is respectfully submitted that claim 1, as well as claim 12, patentably distinguish over the applied prior art references, whether considered individually or in combination.

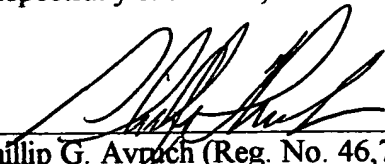
New dependent claims 13 and 14 are added to further protect the invention disclosed in the application.

In summary, it is submitted that this application, as amended, is in condition for allowance. Such action and the passing of this case to issue are respectfully requested.

Should the Examiner feel that a conference would help to expedite the prosecution of this application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Respectfully submitted,

July 19, 2004
Date


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AMENDMENT

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